JAPAN

EDICT OF GOVERNMENT

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JIS A 5801 (1975) (English): Fire-retardant woods for buildings

安 *The citizens of a nation must honor the laws of the land.* 倂

Fukuzawa Yukichi

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JIS

JAPANESE INDUSTRIAL STANDARD

Fire-retardant Woods for Buildings

JIS A 5801–1975

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JAPANESE INDUSTRIAL STANDARD J I S

Fire-retardant Woods for Buildings

A 5801-1975
(Reaffirmed: 1989)

1. Scope

This Japanese Industrial Standard specifies fire-retardant woods for buildings executed with chemical liquid treatment hereafter referred to as "fire-retardant woods".

2. Classification and Dimensions

Classification of fire-retardant woods and manufacturing dimensions as well as dimensions in the case of working at the time of using shall be as given in Table 1.

Table 1

Classification	Manufacturing dimension		Dimensions in the case of working at using	Remark
	Thickness mm			
	Sawn wood	Plane cutting finish		
Grade 1 for outdoor use	15 to 45	Within 2 mm may be reduced from the left described dimension	In width and thickness it is not to be worked to 13 mm or less.	Plate strips
Grade 2 for outdoor use	13		In width and thickness it is not to be worked to 11 mm or less	Plate
Grade 3 for outdoor use	9		In width and thickness it is not to be worked to 7 mm or less	Plate
Grade 1 for indoor use	13 to 45	Within 2 mm may be reduced from the left described dimension	In width and thickness it is not to be worked to 11 mm or less	Plate strips
Grade 2 for indoor use	11		In width and thickness it is not to be worked to 9 mm or less	Plate

Remarks: The minus permissible deviation of thickness is not affirmed.

Applicable Standards:

JIS A 1301-Method of Fire Test for Wooden Structural Parts of Buildings

JIS A 5508-Round Wire Nails

JIS K 8576-Sodium Hydroxide

JIS Z 2102-Method of Measuring Average Width of Annual Rings, Moisture Content and Specific Gravity of Wood

JIS Z 2113-Method of Bending Test for Wood

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3. Quality

3.1 The fire-retardant wood shall be not more than 20 % in moisture content.

3.2 The fire-retardant wood shall be wood without knots, and, free from cracks or remarkable warpage. However, relating to knots not more than 2 cm in maximum diameter and cracks not more than 10 cm in length, in the case where backing or other treatment effective for fire prevention is executed, those are acceptable.

3.3 The chemical liquid to be used for treatment of fire-retardant wood shall not be strong acid and strong alkali causing interference to wood after treatment, be less in fear to corrode irons and zinc and, not accelerate growth of wood rot fungi.

4. Test

4.1 Specimen and Test Body The specimen and test body shall be as given in (1) to (5).

(1) As to the fire-retardant woods, for each treatment unit according to division of tree kind and member kind, take out specimen of core material and take the test body from this specimen.

Further, in the case where the comparing with the non-treated member is carried out in the test, the specimen for taking-out non-treated test body is to be extracted from the same tree kind according to agreement between the parties concerned.

(2) The size of test surface of test body to be used for fire-prevention test is to be 30 cm x 30 cm.

(3) In case where it is impossible to take out the test body having the width of test surface of (2) from the specimen, a test body joined suitably may be used.

(4) The test body is to be plane-cut finished on both surfaces and the thickness is to be in accordance with Table 2.

Table 2

Classification	Thickness of test body mm
For outdoor use grade 1	13
For outdoor use grade 2	11
For outdoor use grade 3	7
For indoor use grade 1	11
For indoor use grade 2	9

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(5) As to test body, take out the required number of pieces in uniform division over the whole length along the central line approximately of member width of specimen.

4.2 Fire-Prevention Test

4.2.1 Dipping Treatment As to the fire-preventive test for fire-retardant woods for outdoor use, as the pretreatment the dipping treatment shall be carried out. For the treatment, overlap two sheets of test body, treat suitably so as not to be separated, cover for water prevention the four peripheral surfaces with a suitable method, and dip in clean water at 20°C for 8 days and nights (192 h). Make the volume of dipping water 50 times or more the total volume of test body to be dipped and the test body so as not to contact mutually or the internal surface of container.

4.2.2 Fire-Preventive Test As to the fire-retardant wood for outdoor use, dry the test body completed with the dipping treatment of 4.2.1 in an oven of good ventilation at 50°C for 24 h, take the dipped surface as the test surface and carry out the fire-preventive test.

As to the fire-retardant wood for indoor use, relating to the test body of 16 ± 2 % in moisture content, carry out the fire-preventive test. The fire-preventive test shall be carried out according to JIS A 1301, and the results shall comply with the specifications.

Further, during the fire-preventive test, cracks or loss of knots reaching the plate back shall not be generated.

4.3 Rust Test Take out the test piece of the same thickness as that of specimen of one sheet or two sheets joined not less than 5 cm square from the specimen not carried out with dipping treatment, dry together with the not treated test body of the same tree kind and same dimensions at 50°C for 24 h, thereafter strike-in vertically five clear round wire nails specified in JIS A 5508 until head part so as the top end to extrude by 1 cm or more, standstill this in the desiccator containing clean water on the bottom part with the head part of nail upward, and leave as it is at 50°C for 10 days.

Next, draw out the nails from the fire-retardant wood test body and non-treated test body, and after boiling this in sodium hydroxide solution (50 %) specified in JIS K 8576 under the same conditions for 30 min, remove the iron rusts sufficiently. In this case, the decreasing rate of weight of round wire nails shall be equivalent or less in comparison with those of non-treated test body.

The fire-retardant wood test body and non-treated test body shall be carried out with the test on each three pieces respectively and for the decreasing rate of weight, the average of three pieces respectively be taken.

4.4 Moisture Absorption Test Take out the test body of 1 cm square of the same thickness as that of specimen from the specimen not carried out with the dipping treatment, after drying at 50°C for 24 h, and after leaving in a container at 25°C in temperature and approximately 90 % in humidity for 24 h, the decreasing rate of weight, in comparison with that of non-treated test body of the same tree kind and same dimensions, shall be within two times.

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In this case, the fire-retardant wood test body and non-treated test body shall be carried out with the test respectively on three pieces and the increasing rate of weight, be taken with respectively average of three pieces.

4.5 Strength Test Take-out the test body of short strip shape of 3 cm in width, 30 cm in length of the same thickness as that of specimen, after drying this at 50°C for 24 h, carry out the bending test according to the specification of JIS Z 2113, and in comparison with that of non-treated test body of the same tree kind and same dimensions, the lowering of bending strength shall be within 10 %.

Further, this test, according to agreement between the parties concerned, may be abbreviated.

4.6 Moisture Content The measuring method of moisture content shall be in accordance with JIS Z 2102.

5. Inspection

Fire-retardant woods shall be subjected to each test of 4. three times and, comply with the specifications in all three times.

6. Marking

Fire-retardant woods shall be marked clearly with the classification, dimensions (width and thickness), manufacturer's name or its abbreviation mark and date of manufacture.

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